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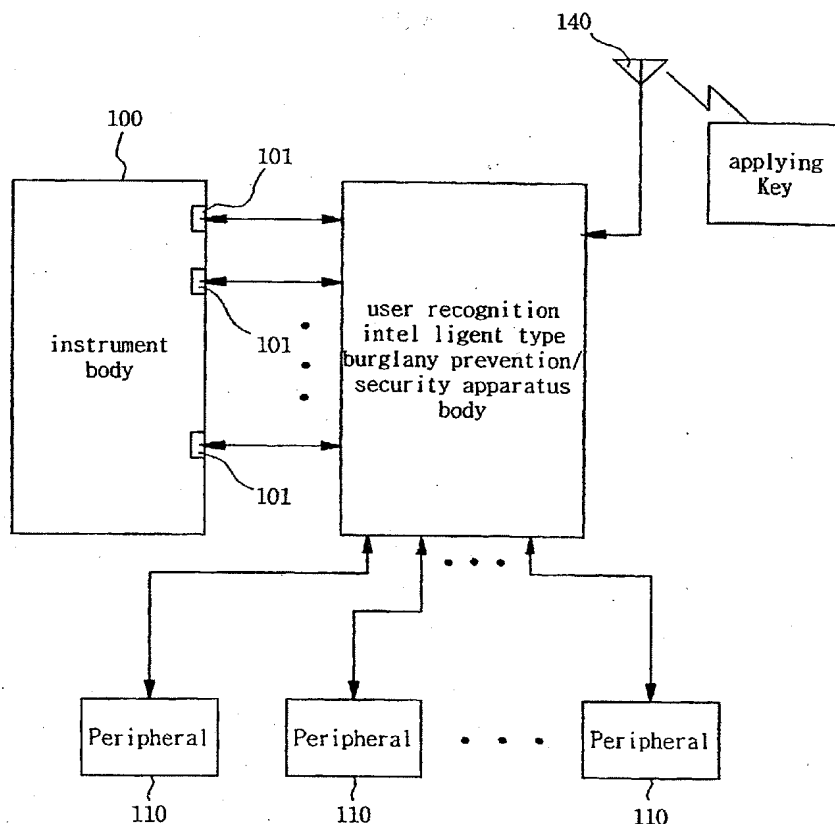
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(54) Title: **USER RECOGNITION ROBBERY PREVENTION AND SECURITY DEVICE**



(57) Abstract: The user recognition intelligent type burglary prevention/information security apparatus body is connected with various instruments (herein after referred to as an instrument) such as a computer, mobile, PDA, electronic product, etc. and effectively prevent a burglary and information leakage by preventing a non-authorized user from using the instrument except for an authorized user. The method of the user recognition intelligent type burglary prevention/information security includes a third step for stopping the operation of peripherals in the case that the user code is not received or is not matched with the stored user code in the first step and judging whether the connection line is disconnected or is removed or the instrument is operated or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

USER RECOGNITION ROBBERY PREVENTION AND SECURITY DEVICE

[Technical Field]

5 The present invention relates to a user recognition burglary prevention and information security apparatus which is capable of preventing a burglary of various computers including a notebook computer and a desk top computer, etc. and is well adapted to a certain apparatus which requires a burglary and security for a PDA, mobile device, etc. and is used as an internal type or an external type and is
10 adapted to a common electronic appliance and home appliance.

[Background Art]

 As a computer industry is advanced, various computers including a portable computer, a desk top computer, etc. are installed in almost offices. In
15 addition, a computer or various electronic equipment are installed in a fabrication site and selling site in which a certain product is fabricated and sold and in many industrial fields.

 In addition, a camcorder, washing machine, audio set including a computer which is used at home, etc. are widely used. The electronic appliances are also
20 widely used. The burglary of the above described electronic appliances including a computer is frequently happened. In addition, an information instrument used for a marketing activity such as a portable terminal , etc. is also frequently stolen.

In the case of the computer, the computer and various information stored in a storing unit like a hard disk drive in a computer are also stolen. In addition, various information stored in the computer in a file form are very important. In this case, if the stored information is stolen, a large damage may occur.

5 Therefore, it is needed to be very careful for preventing the burglary of the computer. In order to overcome the above problem, a security unit is needed so that the important files stored in the computer used by other users except for a legal user are not copied. As a security method capable of preventing other persons from using the computer except for a legal user, there are a booting
10 control method in which a computer booting is basically prevented, and a power control method capable of controlling the power supply of the computer.

In the booting control method, the computer is turned on by a person irrespective of an authorized user or non-authorized user. When the computer is being booted, an authorized user and non-authorized users are recognized by a
15 smart card, magnetic card, fingerprint recognition apparatus, etc. Therefore, the use of the computer is authorized based on the above method. However, in the booting control method, in the case that the authorized user uses the computer, the authorized user must insert the smart card or magnetic card or must recognizes his fingerprint using the fingerprint recognition apparatus for thereby
20 authorizing the use of the computer. Therefore, it is very inconvenient to use the computer by the authorized persons.

In addition, it is possible to turn on the power of the computer irrespective

of the authorized person or non-authorized person. Since the input apparatus such as a keyboard, mouse, etc. may be used. Therefore, the non-authorized person may use the computer without any limitation. Namely, a booting disk is made using the booted computer, and a CMOS setup is changed, so that the computer is turned on by booting the computer using the drive A. Therefore, a certain person may use the computer without authorization. In the case of the software password method which uses a login of the windows program, the computer may be used by deleting or renaming *.PWL file in the directory of the windows. In the case that the security screen saver program is used, a registration information is selected from the Windows, and the password use state is selected to be OFF in the screen saver portion, so that the computer is used. When the screen save function is being active, the computer is rebooted, and then the screen saver function is selected not-used, so that it is possible to use the computer. Therefore, the booting control method is not capable of controlling the use of the computer, so that it is impossible to prevent a burglary of important information stored in the computer.

The power control method is introduced in Patent No. 245,595. According to the patent No. 245,595, since the power of the computer is controlled using a user's key, it is possible to previously prevent an illegal use by other persons except for an authorized person. In addition, the computer body is not separated, so that the hard disk, main board, and various cards are protected from an illegal user. Furthermore, the users may be directly controlled using separate keys and

may be limited to use a certain part of the computer for thereby effectively controlling the burglary of the information by a certain person. However, in this case, a plurality of keys must be separately managed for limiting the use of the computer. In addition, it is very hard to upgrade the computer.

5 In addition, in the case of the information instrument, it becomes a small-sized and is widely used. However, the information instrument may be easily stolen. In this case, the important information stored in the information instrument are also stolen for thereby causing a bog problem.

10 [Summary of the invention]

 Accordingly, it is an object of the present invention to provide an apparatus burglary prevention/security method and an apparatus thereof which are capable of detecting whether a certain user except for a legal user uses an apparatus or moves the same and preventing a burglary of the apparatus by outputting an
15 alarm in the case that it is detected that the apparatus is moved by a certain person except for the legal user.

 It is another object of the present invention to provide a user recognition intelligent type burglary prevention/information security apparatus which is capable of detecting whether a certain person except for a legal user operates an
20 apparatus, preventing a leakage and burglary of an information by reporting the state to a legal user or other surrounding persons by outputting an audio alarm and burglary alarm when a person except for the legal user uses the apparatus,

generating a strong alarm audio(100~120dB) in the case that a line connected with each apparatus is cut or the apparatus is moved for burglary, and alarming the access of the illegal user.

In order to achieve the above objects, there is provided a user recognition intelligent type burglary prevention/information security method which includes the steps of a first step for receiving a user code from a recognition key carried by a user and judging whether the received user code is matched with the user code which is previously stored, a second step for releasing an alarm function in the case that the user code of the first step is matched with the stored user code for thereby implementing a normal use of the instrument, a third step for stopping the operation of peripherals in the case that the user code is not received or is not matched with the stored user code in the first step and judging whether the connection line is disconnected or is removed or the instrument is operated or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body, and a fourth step for generating an alarm with respect to the disconnection and removal of the connection line in the case that the instrument is operated or is moved in the third step or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body.

The fourth step includes a 41st step for outputting an audio alarm which is previously stored in the case that the instrument is operated or moved or the user recognition intelligent type burglary prevention/information security apparatus body

is separated from the instrument body and continuously judging whether the computer is operated or is moved or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the computer body, a 42nd step for outputting an alarm sound when the connection line
5 connected with the peripherals is removed or disconnected in the case that the instrument is operated or moved or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body after the alarm audio signal is outputted in the 41st step and judging whether the received user code is matched with the stored user code, a 43th step for
10 continuously outputting an alarm sound(100~120dB) in the case that the user code is not received in the 42nd step or the received user code is not matched with the stored user code, and a 44th step for stopping the output of the alarm sound in the case that the user code in the 42nd step is not matched with the stored user code.

The user recognition intelligent type burglary prevention/information
15 security apparatus according to the present invention includes an applying key carried by a user for transmitting a user code, and a charging battery connected between the plurality of interface ports and the plurality of the peripherals of the instrument body for charging the power for thereby implementing an alarm, recognition and standby state, so that an alarm is generated by judging whether
20 the instrument is operated or moved and whether the user recognition intelligent type burglary prevention/information security apparatus is separated from the instrument body in a state that the code is received from the applying key, and it is

judged whether there is a user for thereby judging that there is not a user.

In addition, there are provided an applying key such as RFID, RFIC card tag for transmitting a user code by generating a power based on a synchronization in the case that the applying key stores a certain user code and receives the user code, and Irda key, portable RD key. There is provided the applying key which includes an antenna for receiving a frequency and transmitting a certain user code, a power generation unit for generating a power based on the synchronized frequency inputted through the antenna and supplying an operation power, a memory for storing and outputting a previously set user code, and a microprocessor for being operated when the power generation unit supplies an operation power and reading and outputting the user code stored in the memory. The user recognition intelligent type burglary prevention/information security apparatus body includes a microprocessor for judging a user code, operating an alarm function when there is not the user code and controlling the alarm output in the case that the instrument body is operated or moved and the user recognition intelligent type burglary prevention/information security apparatus body is separated, a transmission unit for transmitting a frequency through the antenna in accordance with a control of the microprocessor, a receiving unit for receiving a user code through the antenna, a code detection unit for detecting the user code received by the receiving unit and inputting into the microprocessor, a code storing memory for storing the user code and outputting to the microprocessor, a vibration detection unit for detecting a vibration of the computer body using a 360° multiple

contact point vibration sensor and inputting into the microprocessor, a body separation detection unit for detecting whether the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body using a detection switch installed in the user recognition intelligent

5 type burglary prevention/information security apparatus body and inputting into the microprocessor, an instrument state/power detection unit connected between the instrument body and a plurality of the peripherals for detecting the operation state of the instrument body and the plurality of the peripherals and inputting the detection signal into the microprocessor and detecting the power from the

10 instrument body, a battery for charging the power detected and outputted from the instrument state/power detection unit and supplying to the entire portions of the user recognition intelligent type burglary prevention/information security apparatus body, an audio memory for storing an audio alarm and outputting the stored alarm in accordance with a control instruction of the microprocessor, an audio mixer for

15 mixing the audio signal outputted from the audio memory and outputting through the speaker, and an alarm generation unit for generating an alarm sound in accordance with a control of the microprocessor and outputting through the speaker. The instrument state/power detection unit includes a switching unit for implementing a connection and disconnection operation by switching in

20 accordance with a control instruction of the microprocessor in the case that connection line is disconnected or removed with respect to the signals of a plurality of interface ports and a plurality of peripherals of the instrument body, a

signal variation detection unit for detecting the using state of the computer using the signals of the plurality of the interface ports and the plurality of the peripherals and outputting the detection signal to the microprocessor, and a power detection unit for detecting the power outputted from the interface ports and outputting the same.

[Brief description of the drawings]

Figure 1 is a view illustrating the construction of a user recognition intelligent burglary prevention/information security apparatus according to the present invention;

Figure 2 is a view illustrating the construction of an IC card used as a portable key carried by a user in a user recognition intelligent type burglary prevention/information security apparatus according to the present invention;

Figure 3 is a flow chart of an operation of a microcomputer of a portable key in a user recognition intelligent type burglary prevention/security method according to the present invention;

Figure 4 is a view illustrating the construction of an internal circuit of a burglary prevention/security unit body engaged in a computer in a user recognition intelligent type burglary/information security apparatus according to the present invention;

Figure 5 is a view illustrating a view illustrating the detailed construction of a computer state/power detection unit of a burglary prevention/security unit body in

a user recognition intelligent type burglary prevention/information security apparatus according to the present invention; and

Figure 6 is a flow chart of an operation of a microprocessor of a burglary prevention/security unit body according to a user recognition intelligent burglary prevention/information security apparatus according to the present invention.

[Detailed description of the present invention]

The user recognition intelligent type burglary prevention/information security apparatus and method thereof according to the present invention will be described with reference to the accompanying drawings.

Figure 1 is a view illustrating the construction of a burglary prevention/information security apparatus according to the present invention.

As shown therein, reference numerals 100 represents an instrument body, and 110 represents a plurality of peripherals connected with an interface port 101 such as a keyboard port, mouse port, monitor port, serial port, parallel port, etc. for inputting and outputting a certain signal into the instrument body 100.

Reference numeral 120 represents an applying key carried by a user for transmitting a user code which is previously set. Reference numeral 30 represents a user recognition intelligent type burglary prevention/information security apparatus body connected between the plurality of the interface ports 101 of the instrument body 100 for receiving a code transmitted by the applying key 120 through an antenna 140, judging whether there is a user and generating an

alarming signal in the case that the instrument is operated and moved and is separated from the instrument body 100 in the case that there is not an applied user.

In the thusly constituted user recognition intelligent burglary prevention/information security apparatus according to the present invention, in a state that the burglary prevention/information security apparatus body 130 is connected between the plurality of the interface ports 101 installed in the instrument body 100 and the plurality of the peripherals 110, the applying key 120 carried by the user transmits a certain code which is previously stored, and the transmitted code is outputted to the user recognition intelligent type burglary prevention/information security apparatus body 130 through the antenna, so that it is judged that the user is within a certain range of distance. As a result of the judgement, if the user is within a certain range of distance, the user recognition intelligent type burglary prevention/information security apparatus body 130 releases the alarming function and connects the peripherals 110 to the plurality of the interface ports 101, so that the user operates the peripherals 110.

In addition, as a result of the judgement, if the user is not within a certain range of distance, the user recognition intelligent type burglary prevention/information security apparatus body 130 operates a normal alarming function and separates the peripherals 110 and the plurality of the interface ports 101 of the instrument body 100, so that the user does not use the input units connected with the instrument body 100.

In the above state, the user recognition intelligent type burglary prevention/information security apparatus body 130 checks whether the instrument body 100 is used or moved, and the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100. As a result of the check, if the instrument body 100 is not used or moved, or if the user recognition intelligent type burglary prevention/information security apparatus body 130 is not separated from the instrument body 100, an alarm is not outputted. As a result of the detection, if the instrument body 100 is used or moved or if the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100, an alarm(100~120dB) is outputted.

Figure 2 is a view illustrating the construction of the key used as an applying key 120 carried by the user in the user recognition intelligent type burglary prevention/information security apparatus body according to the present invention.

As shown therein, reference numeral 200 represents an antenna through which a certain frequency signal is transmitted, and a user's code is transmitted, and reference numeral 210 represents a power generation unit for generating a power having a certain frequency received through the antenna 200 and supplying an operation power.

Reference numeral 220 represents a memory for previously storing a certain user code therein and outputting the stored code. Reference numeral 230 represents a microprocessor which is operates when the power generator 210

supplies an operation power and reads and outputs the user code stored in the memory 220. Reference numeral 240 represents a transmission amplifier for amplifying the user code outputted from the microprocessor 230 and transmitting through the antenna 200.

5 In the recognition key 120 of the thusly constituted the user recognition intelligent type burglary prevention/information security apparatus according to the present invention, in the case that a certain frequency is received through the antenna 200, the power generation unit 210 generates and stabilizes the power using the received frequency signal and supplies the operation power to the
10 memory 220, the microprocessor 230 and the transmission amplifier 240, respectively.

As shown in Figure 3, the microprocessor 230 detects the user code stored in the memory 220 in Step S302 in the case that the power is supplied in Step S300 and outputs the detected user code together with the lead-in pulse and
15 lead-out pulse signals in Step S304. Namely, the microprocessor 230 sequentially outputs the lead-in pulse signal, the user code and the lead-out pulse signal.

The lead-in pulse signal, the user code and the lead-out pulse signal sequentially outputted by the microprocessor 230 are amplified to a certain level by the transmission amplifier 240 and are transmitted through the antenna 200.
20 the user recognition intelligent type burglary prevention/information security apparatus body 130 receives the transmitted lead-in pulse signal, user code and lead-out pulse signal and judges whether the legal user uses the system.

Figure 4 is a view illustrating the construction of the internal circuit of the user recognition intelligent type burglary prevention/information security apparatus body engaged in the instrument in the user recognition intelligent type burglary prevention/information security apparatus according to the present invention. As shown therein, reference numeral 400 represents a microprocessor capable of judging the user code, operating the alarming function in the case that there is not the user code, and controlling the alarming output in the case that the instrument body 100 is use or moved and the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated. Reference numeral 402 represents a transmission unit for transmitting a certain frequency through the antenna 140 in accordance with a control instruction of the microprocessor 400. Reference numeral 404 represents a receiving unit for recognizing a certain frequency inputted through the antenna 140 and receiving the user code. Reference numeral 406 represents a code detection unit for detecting the user code received by the receiving unit 404 and inputting into the detected user code into the microprocessor 400.

Reference numeral 408 represents a code storing memory for storing a certain user code and outputting to the microprocessor 400. Reference numeral 412 represents a vibration detection unit for detecting the vibration of the instrument body 100 and inputting into the microprocessor 400. Reference numeral 416 represents a body separation detection unit for detecting whether the user recognition intelligent type burglary prevention/information security apparatus

body 130 is separated from the instrument body 100 using the detection switch 414 installed in the user recognition intelligent type burglary prevention/information security apparatus body 130 and inputting into the microprocessor 400.

Reference numeral 418 represents an instrument state/power detection unit connected between the computer body 100 and the plurality of the peripherals 110 for checking the operation states of the instrument body 100 and the plurality of the peripherals 110, inputting the detection signal into the microprocessor 400 and detecting the power outputted from the instrument body 100. Reference numeral 422 represents a battery for supplying the power detected and outputted from the instrument state/power detection unit 420 to the entire portions of the user recognition intelligent type burglary prevention/information security apparatus body 130.

Reference numeral 424 represents an audio memory for storing an audio alarm signal and outputting the stored audio alarm signal in accordance with a control of the microprocessor 400. Reference numeral 426 represents an audio mixer for mixing the audio signal outputted from the audio memory 424 and outputting to the speaker 428. Reference numeral 430 represents an alarm generation unit for generating an alarm audio in accordance with a control of the microprocessor 400 and outputting to the speaker 428.

In Figure 4, reference numeral 420 represents a diode for preventing a reverse flow of the power outputted by the instrument state and power detection unit 418 and charged in the battery 422.

The detection switch 414 is installed in a certain portion of the user recognition intelligent type burglary prevention/information security apparatus body 130 attached to the instrument body 100 and is connected in such a manner that the state that the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated is detected.

Figure 5 is a view illustrating the detailed construction of the instrument state and power detection unit of the user recognition intelligent type burglary prevention/information security apparatus body according to the present invention. As shown therein, reference numeral 500 represents a switching unit for switching the signals of the plurality of the interface ports 101 of the instrument body 100 and the plurality of the peripherals 110 in accordance with a control instruction of the microprocessor 400. Reference numeral 510 represents a signal variation detection unit for detecting whether the instrument is used using the signals from the plurality of the interface ports 101 and the plurality of the peripherals 110 and outputting the detection signal to the microprocessor 400. Reference numeral 520 represents a power detection unit for detecting and outputting the power outputted from the interface port 101.

The operation of the thusly constituted the user recognition intelligent type burglary prevention/information security apparatus body according to the present invention will be explained with reference to the accompanying drawings.

First, the plurality of the interface ports 101 and the plurality of the peripherals 110 of the instrument body 100 are connected through the switching

unit 500 of the instrument state/power detection unit 418 of the user recognition intelligent type burglary prevention/information security apparatus body 130, and the user recognition intelligent type burglary prevention/information security apparatus body 130 is installed in such a manner that the user recognition
5 intelligent type burglary prevention/information security apparatus body 130 contacts with the instrument body 100 or the bottom, so that the detection switch 414 is in the opened state.

In the above state, when the power of the instrument body 100 is turned on in order to use the instrument by the user, the instrument body 100 operates
10 the booting operation and outputs the power through the interface port 101 during the booting operation for thereby operating the peripherals 110.

The power outputted to the interface port 101 of the instrument body 100 is inputted into the power detection unit 520 of the instrument state/power detection unit 418 of the user recognition intelligent type burglary
15 prevention/information security apparatus body 130, and the detected power is charged in the battery 422 through the diode 420, and the operation power is supplied to the user recognition intelligent type burglary prevention/information security apparatus body 130.

The microprocessor 400 of the user recognition intelligent type burglary
20 prevention/information security apparatus body 130 performs an initialization operation in Step S600 when the power is supplied thereto as shown in Figure 6 and transmits the power by operating the transmission unit 402 in Step 602.

Namely, the microprocessor 400 transmits a signal of a certain frequency through the antenna 404 by controlling the transmission unit 402, the antenna 200 of the applying key 120 receives the signal, and the power generation unit 210 generates the power. The microprocessor 230 operates based on the power generated by the power generator 210. The user code stored in the memory 220 is transmitted through the transmission amplifier 240 and the antenna 200.

In the above state, the microprocessor 400 judges whether a certain code is received in Step S604. Namely, the user code transmitted from the applying key 120 is received by the receiving unit 404 through the antenna 140 of the user recognition intelligent type burglary prevention/information security apparatus body 130. The code detection unit 406 receives a certain code among the receiving signals of the receiving unit 404 and inputs into the microprocessor 400. The microprocessor 400 judges whether a certain code is received using the signal of the code detection unit 406 in Step S604.

In Step S604, in the case that a certain code is received, the microprocessor 400 judges whether the code received in Step S606 is coincided with the user code previously stored in the code storing memory 408. If the code received in Step S606 is matched with the user code stored in the code storing memory 408, the microprocessor 400 releases the alarming function in Step S608 and controls the switching unit 500 of the instrument state and power detection unit 418 in Step S610 and connects the plurality of the interface ports 101 of the instrument body 100 and the plurality of the peripherals 110 for thereby

implementing a normal operation of the peripherals 110.

Namely, the microprocessor 400 of the user recognition intelligent type burglary prevention/information security apparatus body 130 transmits a frequency by controlling the transmission unit 402 and transmits a certain user code which is received and stored in the applying key 120. The applying key transmits a certain user code which is previously received and stored. The user code transmitted by the recognition key 120 is compared with the user code which is received by the user recognition intelligent type burglary prevention/information security apparatus body 130 through the receiving unit 404 and inputted by the microprocessor 400.

As a result of the comparison, both two codes are matched, the microprocessor 400 judges that the user is in the near place and releases the alarming function and enables the normal operation of the peripherals 110 for thereby implementing a normal operation of the instrument by the user.

Here, in the case that the distance between the user recognition intelligent type burglary prevention/information security apparatus body 130 installed in the instrument body and the user is within 1.5~2m, the recognition key 120 synchronizes the frequency outputted from the user recognition intelligent type burglary prevention/information security apparatus body 130, and the frequency transmission level of the user recognition intelligent type burglary prevention/information security apparatus body 130 and the user code transmission level of the recognition key 120 are set so that the user code transmitted from the applying key 120 is received by the user recognition

intelligent type burglary prevention/information security apparatus body 130.

As the user is distanced by more than the set distance, in the case that the code is not received in Step S604 or the user code received in Step S606 is not matched with the stored user code, the microprocessor 400 normally operates the alarming function in Step S612. In Step S614, the operations of the plurality of the peripherals 110 are stopped by controlling the switching unit 500 of the instrument state/power detection unit 418, namely, the same is stopped so that the operation signal of the peripheral 110 is not inputted into the instrument body 100.

In addition, the microprocessor 400 judges whether the instrument is operated or moved or the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated in Steps S616, S618 and S620. Namely, in the case that the peripherals 110 are operated, an output signal of the peripherals 110 is changed, and the signal outputted from the interface port 101 of the instrument body 100 to the peripherals, etc. is changed.

The variations of the output signals of the plurality of the peripherals 110 and the plurality of interface ports 101 of the instrument body 100 are detected by the signal variation detection unit 510 of the instrument state/power detection unit 418 and are outputted. The microprocessor 400 judges whether the instrument is operated by the output signal of the signal variation detection unit 510 in Step S616. In addition, in the case that the computer is moved, the vibration due to the movement of the computer is detected by the 360° multiple contact point vibration sensor 410. The vibration detected by the 360° multiple contact point vibration

sensor 410 is outputted by the vibration detection unit 412. The microprocessor 400 judges the movement of the instrument based on an output signal of the vibration detection unit 412 in Step S618. In the case that the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100, the detection switch 414 is connected and the signal of the detection switch 414 is outputted by the body separation detection unit 416. The microprocessor 400 judged whether the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100 based on the output signal of the body separation detection unit 416 in Step S620.

In the above state, if the operation or the movement of the instrument is not detected, or if it is not detected that the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100, the microprocessor 400 clears the count time in Step S622 and returns to Step S602 and repeatedly perform the operation for judging whether the user is in the near position.

In addition, in the case that the operation or movement of the instrument is detected or in the case that it is detected that the user recognition intelligent type burglary prevention/information security apparatus body 130 is separated from the instrument body 100, the microprocessor 400 counts the passed time in Step S624 and judges whether a certain set time is passed, for example, 10 seconds in Step S626. If the set time is not passed, the audio alarming sound is outputted in

Step S628. Namely, the microprocessor 400 controls the audio memory 424 in Step S628 and outputs the previously stored audio alarm. The outputted audio alarm is mixed by the audio mixer 426. For example, an audio message "Please do not touch the computer" is outputted from the speaker 428 for thereby
5 implementing an alarming operation.

After the above audio alarm is informed, if the instrument is not operated or is not moved, or if the user recognition intelligent type burglary prevention/information security apparatus body 130 is not separated from the instrument body 100, the microprocessor 400 checks and clears the counted time
10 Steps 616, S618 and S620 and Step S622, and the routine is returned to Step S602.

In addition, even when the above audio alarm is outputted, if the illegal user continuously operates or moves the computer, or if the user recognition intelligent type burglary prevention/information security apparatus body 130 is
15 separated from the instrument body 100, the microprocessor 400 controls the alarm generation unit 430 in Step S630 and outputs the alarm sound(100~120dB) through the speaker 428 and transmits a certain frequency by controlling the transmission unit 402. A certain user code is received in Step S632, and it is judged whether the received code is matched with the code stored in the storing
20 memory 408. As a result of the judgement, if the code of the applied user is not received or if the received code is not matched with the code stored in the storing memory 408, the microprocessor 400 returns to Step S630 and outputs the alarm

sound(100~120dB). In the case that an information of the applied user is received, the operation for judging whether the information is matched with the stored user code is repeatedly performed. In Step S632, the user code is received. In Step S634, if the received code is matched with the code stored in the code storing memory 408, the microprocessor 400 controls the alarm generation unit 430 in Step S636 and stops the output of the alarm sound.

As described above, the present invention was illustrated and described based on the preferred embodiments. The present invention is not limited thereto. It is known to a person skilled in the art that the present invention is variously modified and varied within a limit without escaping from the spirit and field of the present invention prepared in the following patent claim scope. For example, in the embodiments, the system using the multiprocessor system including a Pentium host computer and special multimedia processor was described. Other processor structures may be implemented in another preferred embodiments.

[Effects of the invention]

As described above, it is not needed to operate the instrument by a user. The user may stably use the instrument by simply carrying the applying key. In the case that the instrument is operated by a certain illegal user except for the user or is moved or if the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body, an alarm sound is outputted, so that it is possible to prevent the burglary of the instrument and the

leakage and loss of the information stored in the instrument.

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[What is claimed is]

1. A user recognition intelligent type burglary prevention/security method/security apparatus, comprising the steps of:

5 a first step for receiving a user code from a recognition key carried by a user and judging whether the received user code is matched with the user code which is previously stored;

a second step for releasing an alarm function in the case that the user code of the first step is matched with the stored user code for thereby implementing a normal use of the instrument;

10 a third step for stopping the operation of peripherals in the case that the user code is not received or is not matched with the stored user code in the first step and judging whether the connection line is disconnected or is removed or the instrument is operated or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument
15 body; and

a fourth step for generating an alarm with respect to the disconnection and removal of the connection line in the case that the instrument is operated or is moved in the third step or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument
20 body.

2. The method of claim 1, wherein said fourth step includes:

a 41st step for outputting an audio alarm which is previously stored in the case that the instrument is operated or moved or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body and continuously judging whether the computer is operated or is
5 moved or the user recognition intelligent type burglary prevention/information security apparatus body is separated from the computer body;

a 42nd step for outputting an alarm sound when the connection line connected with the peripherals is removed or disconnected in the case that the instrument is operated or moved or the user recognition intelligent type burglary
10 prevention/information security apparatus body is separated from the instrument body after the alarm audio signal is outputted in the 41st step and judging whether the received user code is matched with the stored user code;

a 43th step for continuously outputting an alarm sound(100~120dB) in the case that the user code is not received in the 42nd step or the received user code
15 is not matched with the stored user code; and

a 44th step for stopping the output of the alarm sound in the case that the user code in the 42nd step is not matched with the stored user code.

3. The method either claim 1 or claim 2, wherein said first step and 42nd step
20 include a step for transmitting a certain frequency or a user code through a RFIC card, RFID card, Irda key, RF key, portable key, etc. which are a recognition key, generating a power based on a frequency transmitted by the portable key and

transmitting the stored user code, wherein the recognition distance is set within a range of 1~5m, and the input unit of the 42nd step is a fingerprint recognition, voice recognition, iris, wired key, etc. in addition to the above key method.

- 5 4. A user recognition intelligent type burglary prevention/information security apparatus, comprising:

an applying key carried by a user for transmitting a set code; and

a user recognition intelligent type burglary prevention/information security apparatus body connected with a plurality of interface ports and a plurality of
10 peripherals of an instrument body for receiving a code from the applying key, judging whether there is a user, judging whether the instrument is operated or moved or the user recognition intelligent type burglary prevention/information security apparatus is separated from the instrument body in a state that there is not the user and generating an alarm signal.

15

5. The apparatus of claim 4, wherein said applying key is capable of storing the user code, generating and operating the power in the case that the frequency is synchronized and transmitting the stored user code.

20

6. The apparatus of either claim 4 or claim 5, wherein said applying key includes:

an antenna for receiving a frequency and transmitting a certain user code;
a power generation unit for generating a power based on the synchronized frequency inputted through the antenna and supplying an operation power;
a memory for storing and outputting a previously set user code;
5 a microprocessor for being operated when the power generation unit supplies an operation power and reading and outputting the user code stored in the memory; and
a transmission amplifier for amplifying the user code outputted from the microprocessor and transmitting through the antenna.

10

7. The method of claim 4, wherein said step for judging the operation of the instrument of the user recognition intelligent type burglary prevention/information security apparatus body is implemented by judging a variation of a signal outputted from an interface port of the instrument body and the peripherals.

15

8. The method of claim 4, wherein said step for judging the movement of the computer of the user recognition intelligent type burglary prevention/information security apparatus body is implemented by detecting the vibration generated due to the movement of the instrument body and detecting the movement and vibration
20 of the user recognition intelligent type burglary prevention/information security apparatus body using a 360° multiple contact point sensor.

9. The method of claim 4, wherein said step for judging the separation of the user recognition intelligent type burglary prevention/information security apparatus body from the instrument body is implemented using a detection switch which is switched when the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body.

10. The apparatus of claim 4, wherein said user recognition intelligent type burglary prevention/information security apparatus body includes:

a microprocessor for judging a user code, operating an alarm function when there is not the user code and controlling the alarm output in the case that the instrument body is operated or moved and the user recognition intelligent type burglary prevention/information security apparatus body is separated;

a transmission unit for transmitting a frequency through the antenna in accordance with a control of the microprocessor;

a receiving unit for receiving a user code through the antenna;

a code detection unit for detecting the user code received by the receiving unit and inputting into the microprocessor;

a code storing memory for storing the user code and outputting to the microprocessor;

a vibration detection unit for detecting a vibration of the computer body using a 360° multiple contact point vibration sensor and inputting into the microprocessor;

a body separation detection unit for detecting whether the user recognition intelligent type burglary prevention/information security apparatus body is separated from the instrument body using a detection switch installed in the user recognition intelligent type burglary prevention/information security apparatus body
5 and inputting into the microprocessor;

an instrument state/power detection unit connected between the instrument body and a plurality of the peripherals for detecting the operation state of the instrument body and the plurality of the peripherals and inputting the detection signal into the microprocessor and detecting the power from the
10 instrument body;

a battery for charging the power detected and outputted from the instrument state/power detection unit and supplying to the entire portions of the user recognition intelligent type burglary prevention/information security apparatus body;

15 an audio memory for storing an audio alarm and outputting the stored alarm in accordance with a control instruction of the microprocessor;

an audio mixer for mixing the audio signal outputted from the audio memory and outputting through the speaker; and

an alarm generation unit for generating an alarm sound in accordance with
20 a control of the microprocessor and outputting through the speaker.

11. The apparatus of claim 10, wherein said instrument state/power detection

unit includes:

a switching unit for implementing a connection and disconnection operation by switching in accordance with a control instruction of the microprocessor in the case that connection line is disconnected or removed with
5 respect to the signals of a plurality of interface ports and a plurality of peripherals of the instrument body;

a signal variation detection unit for detecting the using state of the computer using the signals of the plurality of the interface ports and the plurality of the peripherals and outputting the detection signal to the microprocessor; and

10 a power detection unit for detecting the power outputted from the interface ports and outputting the same.

12. A user recognition intelligent type burglary prevention/information security apparatus in which a user's installation is not implemented in a fixed portion, and
15 an instrument of a use destination is engaged in an external type or internal type.

13. The apparatus of claim 1, wherein said internal type of the instrument is engaged in the body of the instrument and the plurality of the peripherals.

20 14. A user recognition intelligent type burglary prevention/information security apparatus in which an external connection apparatus is optional to a user for controlling each interface port and peripheral for providing a convenience to the

user.

15. A user recognition intelligent type burglary prevention/information security apparatus in which an additional setting or set-up process is simplified and
5 minimized for a convenience of a user.

16. A user recognition intelligent type burglary prevention/information security apparatus in which the outputs of an alarm audio signal and alarm sound are limited by controlling an alarm generation function by operating a switching unit
10 installed in a destination instrument body out of an available range escape for the purpose of the movement of the instrument body for a user's convenience in the first and second steps.

17. A user recognition intelligent type burglary prevention/information security
15 apparatus in which when a certain user accesses a computer having a user recognition intelligent type computer burglary prevention/information security instrument through a network in cooperation with a security software, an alarm audio message is outputted through the interface port because a computer is remotely operated, and an information is leaked and an information is modified in
20 a remote control computer connected with a network in an internet environment.

18. In each claim, wherein said computer represents various computers such

as a notebook computer, a desk top computer, etc. and various electric products, electronic products and home and industrial instrument which include PDA, mobile device, camcorder, CPU, microprocessor, microcontroller, etc.

5

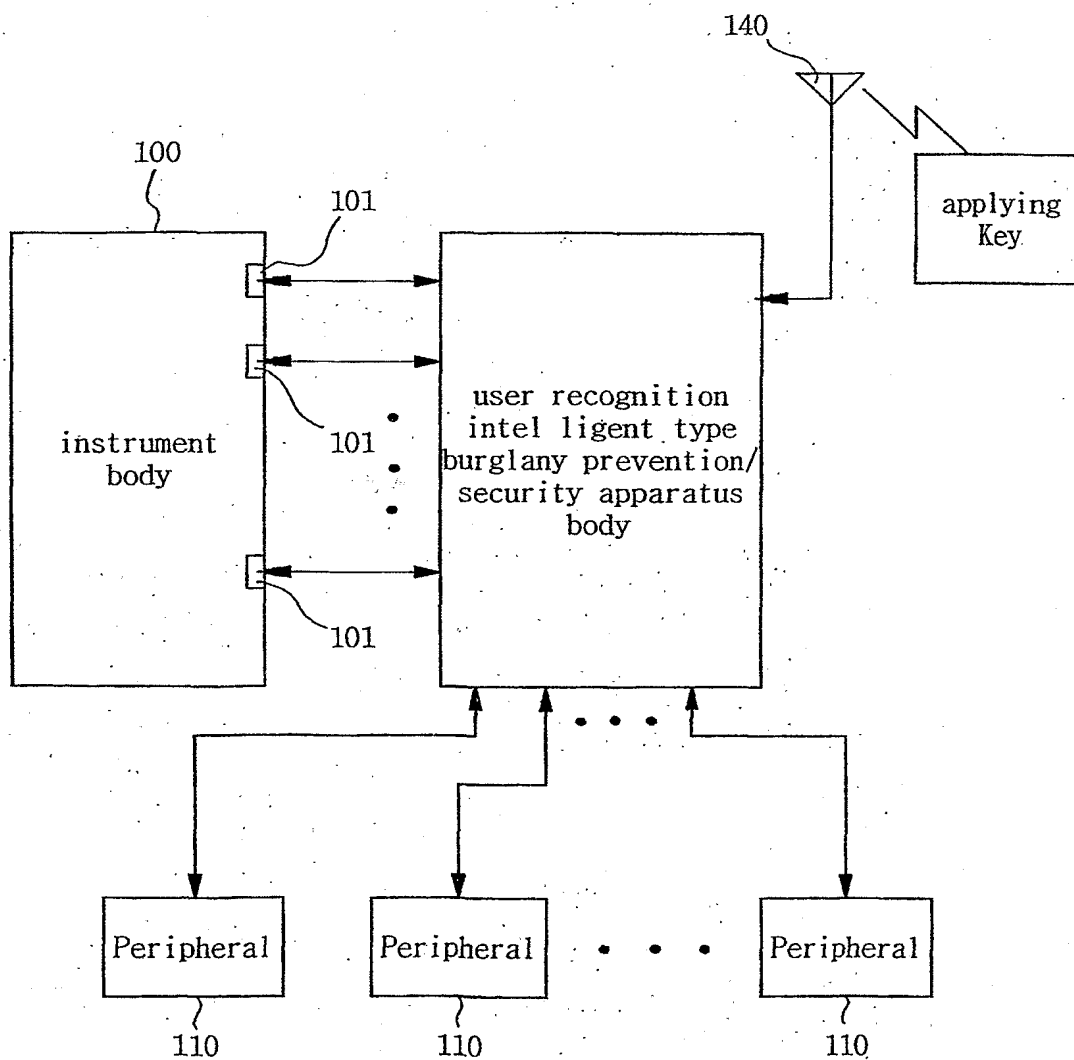
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FIG. 1



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FIG. 2

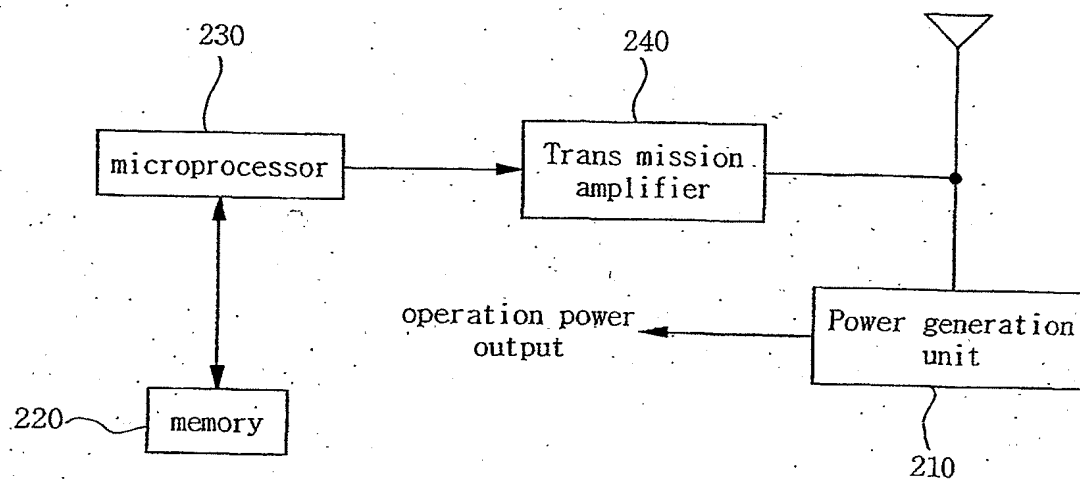
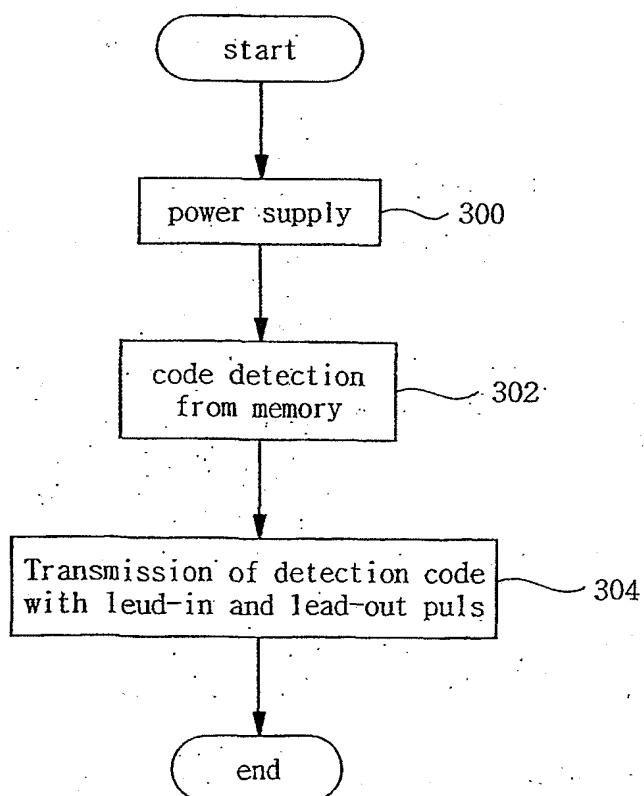
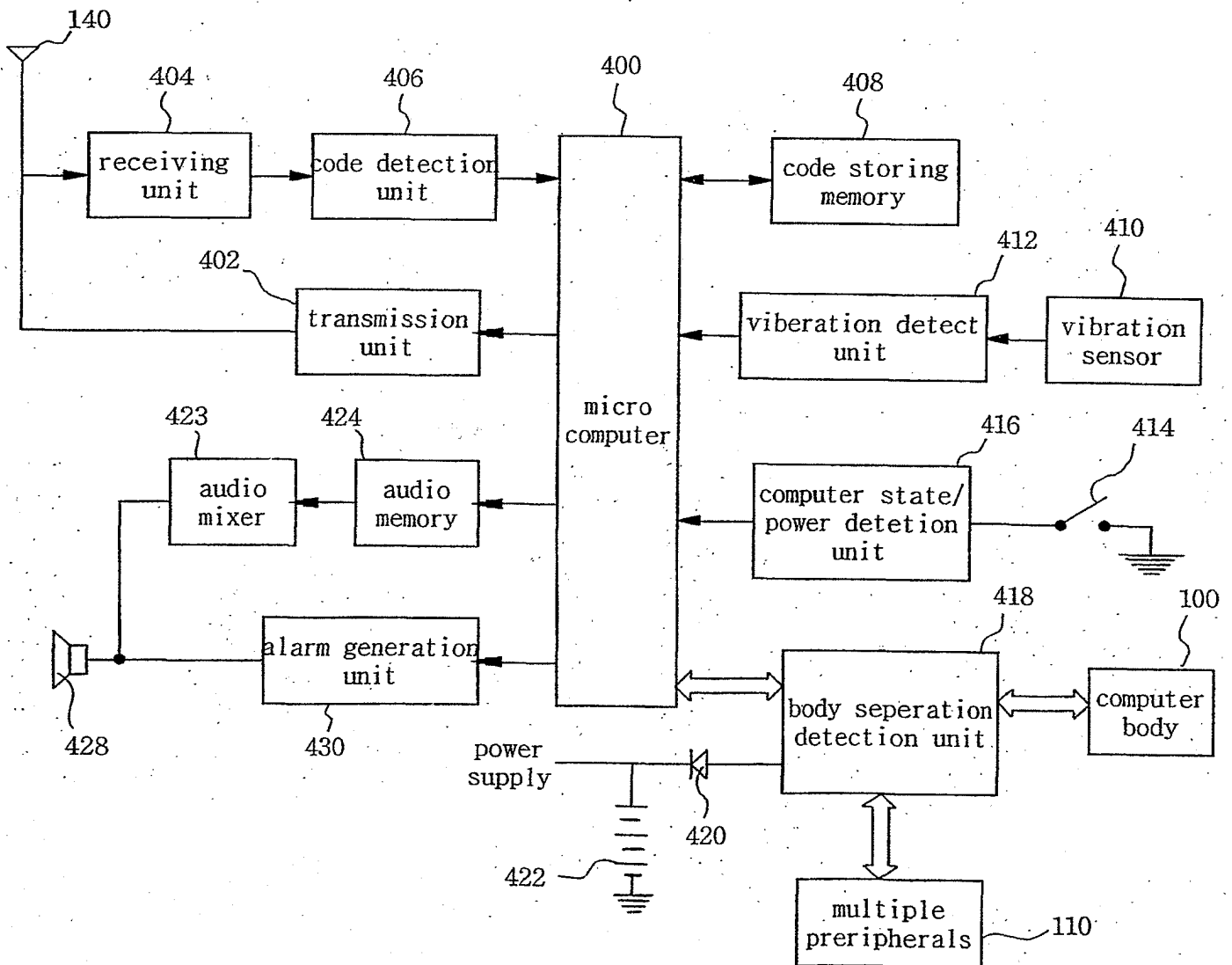


FIG. 3



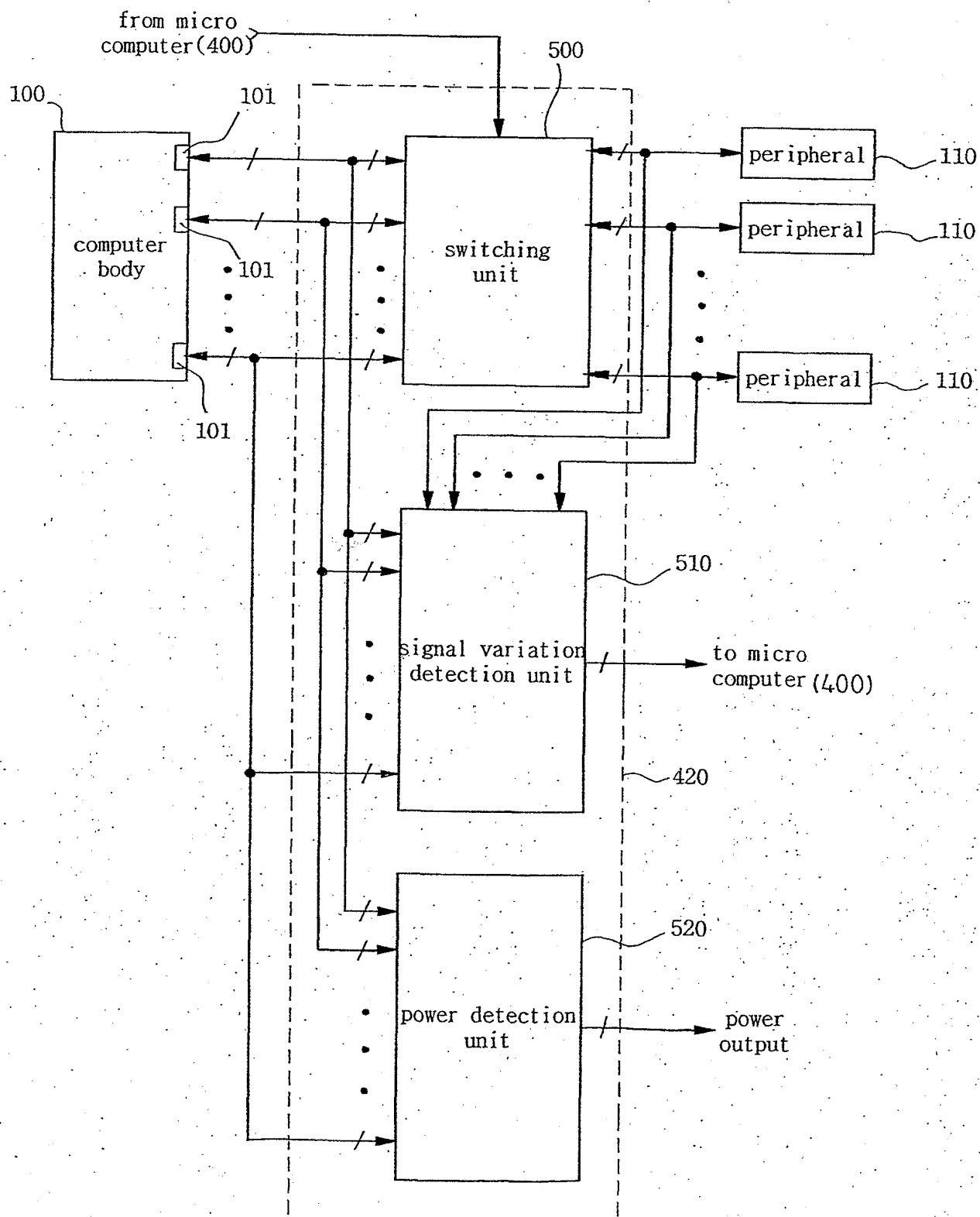
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FIG. 4



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FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR00/00674

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
KIPONET, EPO, JAP

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| Y A | KR 1989-0008711 (SAMSUNG ELECTRONICS CO., LTD) 12 July 1989 claim 1 | 1-4, 8, 16 5-6 |
| Y A | KR 1998-069100 (KYUNGKI SYSTEM CO., LTD) 26 October 1998 Abstract, claims 1-6, fig.3 | 1-4, 8, 16 7 |
| A | KR 1997-0068260 (DAEWOO TELECOM LTD.) 13 October 1997 Abstract, claims 1, 4 | 1-11 |
| A | KR 1998-039414 (HYUNDAE AUTOMOBILE CO., LTD) 17 August 1998 Abstract, claims 1,2,3 | 1-11 |

☐ Further documents are listed in the continuation of Box C:

☐ See patent family annex.

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Date of the actual completion of the international search

29 MARCH 2001 (29.03.2001)

Date of mailing of the international search report

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